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ABSTRACT

A model is outlined for translating validated instructional principles into effective educational practices. Thirty-seven resource room teachers attended two three-hour workshops which were designed to train them to use an instructional program for teaching ten sight words to remedial readers. Teachers' reactions to the program were gathered as data for testing experimental modifications to the program. The first workshop began with an orientation to the principles of remedial teaching, forming the basis of the sight word program. This was followed by training in the specific program methods. Three program modifications were used for one week by three groups of teachers. The methods varied the number of words introduced at one time and the use of reduced response competition (RRC--temporarily dropping words from list practice as they are learned). At the second workshop session, separate group meetings were held to gather data on each teaching method and to discuss teacher reactions to the program. This was followed by a general session in which the specific research was discussed. The data and the teachers' reactions indicate that teaching in five-word units using RRC was the best of the three methods. The workshop/applied research method was found to be beneficial to both practitioners and researchers. (Authors/PG)

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RESEARCH INSTITUTE FOR THE STUDY OF LEARNING DISABILITIES
Teachers College, Columbia University

NARROWING THE GAP BETWEEN RESEARCH AND PRACTICE

N. Dale Bryant, Harriet R. Fayne, Beatrice Gavish,
and Maribeth Gettinger

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The Institute is composed of five independent task forces that focus on specific academic skill areas fundamental to the school curriculum: basic reading and spelling, reading comprehension, arithmetic, and study skills. All of the task forces are dedicated to the identification of specific disabilities in these skill areas and to the development of effective remedial instruction.

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Abstract

This article outlines a model for translating data-based instructional principles into effective educational practices. Thirty-seven resource room teachers attended two three-hour workshops which were designed to train them to use an instructional program for teaching 10 sight words to remedial readers and to use their reactions to the program as a data-gathering tool for testing experimental modifications of the program. The first workshop began with an orientation to the principles of remedial teaching which formed the basis of the sight word program. This was followed by training in the specific program methods. Three modifications of the program were used with three groups of teachers. The conditions varied the number of words introduced at one time (5+5 or 10) and the use of reduced response competition (RRC- temporarily dropping words from list practice as they are learned). At the second workshop session separate group meetings were held to gather data on each teaching condition and to discuss teacher reactions to the program. This was followed by a general session at which the specific research was discussed. The data and the teachers' reactions indicated that teaching in units of 5+5 using RRC was the most optimal of the three conditions. The workshop/applied research format was found to be beneficial to both practitioners and researchers.

Narrowing the Gap Between Research and Practice

A primary objective of research on reading instruction is to improve the quality of teaching in schools. By providing sound principles of instruction, information about the learning process, or innovative techniques, researchers hope to have a direct impact on reading achievement for a school-aged population. However, a discrepancy often exists between available research information and ongoing educational programs. Several reviews of the literature have noted a lag between the generation of research findings and their utilization in educational practice (e.g., Barton & Wilder, 1964; Havelock, 1972; Singer, 1978). These research reviews show quite clearly that adoption of research knowledge and products by field-personnel is not automatic. Venezky (1979) attributed the gap between research and practice to the numerous and often contradictory theoretical perspectives on reading, to the limited applicability of findings based on brief, experimental procedures, and to resistance on the part of publishers as well as educators schooled in a particular instructional methodology.

How can researchers help to bridge the gap between theory and practice? Research suggests that dissemination activities which are relevant to teachers and practitioners require as careful planning as the research activities themselves. One overriding conclusion that stands out in the literature on the utilization of research results is that practitioners are most swayed by personal encounters, such as workshops, conferences, or seminars (e.g., Embry, 1979; Glaser, 1973; Glaser, Coffey, Machs, & Sarason, 1967; Rubin, 1968). The purpose of

this article is to describe a successful program which was carried out through the joint efforts of the New York City's Learning Disabilities Resource Room program and the Basic Reading Task Force of the Research Institute for the Study of Learning Disabilities at Teachers College, Columbia University. Learning disabilities resource room teachers participated in two training workshops and were provided with a one-week instructional packet to be used with children in their resource rooms. This program served two purposes: (1) It gave the task force an opportunity to document the effectiveness of its instructional materials in the field; and, (2) It gave resource room teachers exposure to systematic procedures which had positive effects on the achievement of learning disabled (LD) youngsters. Thus, the program outlined in this paper serves as a model for translating data-based, instructional principles into effective educational practices.

Background Information on the Teachers

Thirty-seven LD resource room teachers participated in two, three-hour training workshops held at Teachers College, Columbia University, on two successive Fridays during the spring of 1979. These teachers constituted the entire population of elementary school LD resource room teachers in four of the five New York City boroughs at the time of the workshops. Before the first workshop began, teachers were asked to fill out a questionnaire which asked for background information as well as expectations regarding the specific workshops.

Teachers varied greatly both in length of service with LD children

($\bar{X}$ = 2.7 years; SD = 3.1; range = 1 month - 12 years) and in the amount of inservice training that they had received, as measured by the number of workshops attended over the preceding two-year period ($\bar{X}$ = 14.7; SD = 13.8; range = 0-50). There was, however, general agreement on the usefulness of inservice training. Teachers strongly agreed that workshops provided an excellent opportunity to communicate with their peers, to further their skills, and to broaden their knowledge of the field.

Each teacher involved in the training was working with a maximum of 20 LD youngsters, ranging in age from 7 to 12 years. Children had been placed in the LD Resource Room program by interdisciplinary evaluation teams because of a substantial discrepancy between school achievement and intellectual functioning. Children were seen by resource room teachers in small groups (maximum of five children) for at least one period per day.

Workshop Format

The first workshop began with introductory remarks by Dr. Jed Luchow, Acting Supervisor of the New York City Resource Room Program, and Candice Edelbaum, Head Teacher-Trainer of the program. Dr. Luchow and Ms. Edelbaum welcomed the teachers and gave an overview of the activities planned for the two sessions. Following these introductory remarks, Dr. N. Dale Bryant, task force coordinator at Teachers College Research Institute for the Study of Learning Disabilities, gave a talk on the specific remedial principles incorporated in the instructional packets that the teachers would receive. Immediately after Dr. Bryant's presenta-

tion, teachers were divided into three groups. Assignment to groups had been made on a random basis prior to the workshop. Teachers were informed that each group would be presented with a different modification of Institute lessons designed to teach sight words.

Group sessions were led by three Institute task force members and focused on the specific methods of sight-word teaching incorporated in the lesson packets. The lesson packet was designed to teach ten sight words in three lessons over a one-week period. All groups received teaching scripts which spelled out procedures, recording sheets to be used during the lessons, materials for discrimination practice, test materials, and stories which included the sight words for the week. Teachers were not informed about the specific experimental modifications which differentiated the three groups. Training included a careful reading of the prescribed scripts as well as simulated activities on the procedures. Teachers were asked to use the lesson packet during the following week with two to five of their children. (The actual materials and the three experimental modifications are described at a later point in this paper.)

Teachers met in three separate groups at the beginning of the second workshop. These meetings allowed group leaders to collect data on the children who had been taught over the past week. In addition, this session served as a feedback period during which all teachers could make comments and offer criticisms. After these group sessions, all 33 teachers were brought together for a general session. During this general session, they were introduced to the specific research

questions which the task force members were asking and to a quick tally of results based on the findings of the three groups. Teachers were encouraged to react to these preliminary findings and to comment on the lesson packets.

Lesson Packets and Experimental Modifications

The entire procedure for all three experimental conditions required four instructional periods during one week. An outline of the general format is presented in Table 1.

Table 1

Outline of Sight Word Lessons

Day One	a. All words are introduced and defined. b. Children are given 2 rounds of practice reading each word to a criterion of 1 correct trial in each practice round. c. Teachers record trials-to-criterion for each child.
Day Two	a. Children are given 1 round of practice reading each word to criterion. b. Teachers record trials-to-criterion. c. Discrimination practice is provided: Children are presented with the 10 words mixed with 10 miscue words. They are asked to read the real words and to say "no" to miscue words.
Day Three	a. Words are reviewed 1 time. b. Children receive oral reading and silent reading practice on a story incorporating the 10 words. c. Teacher asks comprehension questions (no recording of responses).
Day Four	a. Individual posttesting: Children are asked to read the 10 words and to reject 10 miscue words. Teacher records responses on individual answer sheets.

Goals of the one-week packet were as follows: (1) To teach LD children to read ten new sight words; (2) To help children to discriminate these words from other visually similar items; and, (3) To enable children to read stories containing these words.

Earlier investigations conducted by the Institute had ensured that the lesson format was efficient for the teaching of ten sight words to LD children. Emphasis during instruction was on repeated practice until a criterion level of performance was achieved, corrective and immediate feedback, automatic responses, and distributed review.

Teachers from all three treatment groups taught the same words; their instruction varied with respect to the number of words introduced at one time on the first day of instruction (one 10-word unit vs. two 5-word units) and the use of reduced response competition (RRC--temporarily dropping words from list practice as they are learned) during practice rounds.

A brief description of the three treatment conditions follows:

(1) 5 + 5: While the ultimate goal was the learning of 10 sight words, the actual number of words introduced and taught at one time was only 5. Words were dropped temporarily from a round of practice as they were learned to criterion (one correct trial).

(2) 10 with RRC: All 10 words were introduced and taught at one time. Words were dropped temporarily from a practice round as they were mastered.

(3) 10 without RRC: All 10 words were presented at one time. Each child was called upon to read the entire 10-word list during each round

of practice until all words had been read correctly one time.

In all conditions, teachers collected data on the number of trials needed to reach criterion for each word across all three practice rounds, the number of words read correctly in isolation on the posttest, and the number of miscue words correctly rejected on the posttest.

Effect of Instructional Packets on Children's Performance

A total of 128 children completed the four days of instruction and testing. Children were taught in groups of three to five and ranged in age from 6-3 to 10-7 years. The average age for the total sample was 8-4; the three treatment groups did not differ in age.

Posttest scores and trials-to-criterion scores are presented for all three treatment groups in Table 2. The results indicate that the procedures were effective in teaching children to read, on the average, between 92% and 96% of the sight words taught and to discriminate and reject correctly 78% to 89% of the miscue words. While there were no significant differences among the groups on posttest performance, children taught using reduced response competition took fewer trials on the three practice rounds to learn the 10 words to a criterion level. Multiple t tests indicated that there were significant differences between means for the 5 + 5 and 10 without RRC groups ($t = 3.96$; 78 df) and between means for the 10 with RRC and 10 without RRC groups ($t = 3.75$; 83 df). These differences were significant at an overall level of $p < .05$. In addition, both of the reduced response competition procedures produced less variability among children in the number of trials needed to reach criterion.

Table 2

Posttest Performance and Trials-to-Criterion Scores

for Three Treatment Groups

Treatment Group	N	Words Correct On Posttest[a]	Miscue Words Correct[b]	Trials Per Word For 3 Rounds[c]
5 + 5	43	9.53	8.53	3.32
		(0.75)	(1.48)	(0.38)
10 with RRC	47	9.14	7.80	3.40
		(1.20)	(2.15)	(0.45)
10 Without RRC	38	9.60	8.94	4.89
		(1.06)	(1.39)	(2.42)

Note: Numbers in parantheses are standard deviations.

[a]Possible range: 0-10.

[b]Possible range: 0-10.

[c]Possible range: 3-30.

During the general feedback session, teachers agreed that the procedure using both reduced response competition and 5-word instructional units was the most optimal of the three conditions. Teachers in that condition reported greater ease and speed of teaching and felt that children mastered the material quickly and responded more favorably.

Teachers' Reactions to Workshop and Instructional Packets

Questionnaires which tapped teachers' attitudes about the instructional packets were administered at the end of the first workshop and at the beginning of the second workshop. After the first workshop, 68% of the teachers felt that the experimental procedures would be a useful addition to their teaching repertoires and 86% responded that the directions related to teaching and testing were very clearly stated. When asked about the primary strength of the material, teachers mentioned repetition, focus, discrimination training, and structure. The most common response to a question about possible sources of difficulty was the fear that many pupils might become inattentive because of the repetitive nature of the material. On the average, teachers felt that approximately 50% of their children would benefit from the instruction.

After teaching the sight word lessons to a group of children, 74% of the teachers indicated that they would adopt the procedures as part of their regular teaching. Only one teacher commented that more sight words should be included in the lessons, while 50% of the

teachers commented that fewer words should be taught to certain pupils. One major problem area noted by 56% of the teachers was the wide variation in learning rate (i.e., trials needed to reach criterion) among children in their groups. Because an individual child might take many trials per word, other children in the group would lose interest. Teachers were evenly split on items which addressed issues such as the addition of tangible reinforcers and changes in the amount of practice.

Summary and Conclusions

It is possible to bridge the gap between research and practice. The workshop/applied research format described in this article was mutually beneficial to practitioners and researchers. Learning disabilities resource room teachers were given both a general orientation to an instructional model and an opportunity to try out specific interventions In addition, teachers were participants in actual data-gathering and could share the findings of over 30 colleagues. Constructive comments and criticisms made by practitioners allowed the task force researchers to refine their techniques and materials in subsequent versions of the sight word lessons. Future attempts should be made to combine research and teacher-training efforts.

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